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	Filing Date	August 29, 2002	
	First Named Inventor	EDWIN YOUNG CALL	
	Art Unit	1762	
	Examiner Name	Katherine A. Bareford	
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ENCLOSURES (check all that apply)

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SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm	Smith, Gambrell & Russell, LLP		
Signature			
Printed Name	Robert G. Weilacher		
Date	Sept. 19, 2005	Reg. No.	20,531

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Appl. No. **10/089,315**
Appellant: **EDWIN YOUNG CALL**
Filed: **August 29, 2002**
TC/A.U. **1762**
Examiner: **Katherine A. Bareford**
Title: **SYSTEM FOR PROTECTION OF SUBMERGED MARINE SURFACES**

Docket No.: **032867.0031**
Customer No.: **25461**

**MAIL STOP APPEAL BRIEF-
PATENTS**

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APPELLANT'S BRIEF IN REPLY TO EXAMINER'S ANSWER

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APPELLANT'S BRIEF IN REPLY TO EXAMINER'S ANSWER

I. Appellant's Specification Meets the Requirements of 35 U.S.C. § 112.

Appellant's claims comply with the requirement of 35 U.S.C. § 112 (first paragraph), and provide an adequate written description for the use of zinc or a zinc alloy as the second wire for the electric arc, twin wire thermal spraying process to form anti-fouling coatings on submerged surfaces where marine animals and plant life cause bio-fouling.

The Examiner's Answer (pg. 4, line 12, et seq.) takes the position that the second wire in the twin wire system is either all zinc or only copper, aluminum, tin, nickel or magnesium. Further, the Examiner's Answer takes the position that there is no teaching or suggestion of the use of a second wire which is a "zinc alloy". Appellant disagrees for the following reasons.

Attention is invited to the opening paragraph providing the introduction and background of the invention found on page 1, beginning at line 10, of this application:

"The invention is a system comprised of metallized coatings and thermal spray procedures that produces a unique protective coating. In particular, the invention consists of preparing and applying zinc and zinc-based alloys. These materials are thermal sprayed with unique metallizing processes and procedures onto surfaces of submerged marine structures. This invention differs from other metalized coatings in that it performs the function of bio-fouling protection and cathodic protection."

Appellant invites attention to the fact that the words "These materials" in the phrase "These materials are thermal sprayed", means "zinc and zinc-based alloys." The term "zinc-based alloys" means alloys containing zinc.

Thus, at the very beginning of the specification, appellant has established that the zinc and zinc-based alloys are thermal sprayed to provide the unique protective coating against bio-

fouling. In describing some of the alloys, appellant makes specific reference to zinc-copper as one of the alloys selected for the prevention of bio-fouling. See page 4, line 20.

Note again on page 5, appellant points out that the coating of the present invention is comprised of zinc and zinc-based alloys. (See lines 16 and 17).

In speaking of the coatings, appellant has described the use of both zinc and zinc based alloys to provide a durable coating; see page 5, lines 26 and 27.

The Examiner's Answer focuses on the two sentences found in the application at the bottom of page 7, beginning at line 29, namely:

“It is preferred to use a two wire system with arc spraying techniques. Thus, one of the wires may be zinc and the second wire can be zinc or copper, aluminum, tin, nickel or magnesium.”

In the Examiner's Answer on page 5, this passage of appellant's specification is restated in such a way that it takes on a different meaning. Whereas the application clearly says that the second wire can be “zinc or copper, aluminum, tin, nickel or magnesium”, the Examiner's Answer says that “... the second wire must be either all zinc or all one of the other listed metals” (emphasis added). This interpretation as stated in the Examiner's Answer on page 5 does not comport with the actual words used by appellant in the specification.

Note in this regard, the disclosure on page 7, lines 1 to 4, of this application wherein zinc-based metal wire is defined by appellant as composed of 50 to 100% zinc and the remaining metals include, but are not limited to, copper, carbon, tin, nickel, aluminum, and magnesium. Clearly, the word “remaining” means that there are alloying metals present together with the zinc. Thus, appellant has sufficiently defined the composition of the wires that are used in the thermal spray system so that a person skilled in the art would understand that alloys of zinc with the other recited metals is meant.

The Examiner's Answer ignores the general disclosure in this application which describes the specific characteristics of the wires used to produce the anti-fouling coatings when considering the specific mention of the two-wire system found on page 7, beginning at line 29. The Examiner's Answer views the disclosure on page 7, line 29, et seq., as if it is unrelated to what has been said about the invention in the first 6 pages of the application.

When the entire specification speaks of zinc and zinc alloys used to produce the anti-fouling coatings, there is no basis for the Examiner's Answer to take the position that there are two embodiments in this invention one in which zinc and zinc alloys are used and one in which zinc and a non-zinc alloy is used. To carry the conclusion in the Examiner's Answer to its end would mean that the disclosure teaches two inventions, one using zinc and zinc alloys and the other using zinc and an alloy with other metals not including zinc. This is inconsistent with the written description of the invention which pertains to, as stated on page 1, applying zinc and zinc-based alloys by thermal spraying.

Thus, in summary, appellant has pointed out that his invention resides in spraying these materials by thermal spraying, i.e., zinc and zinc-based alloys. To interpret this passage of the application to mean that in one aspect the invention relates to applying zinc and zinc-based alloys and in another aspect applying non-zinc-based alloys flies in the face of common sense.

Furthermore, in accordance with the conclusions reached in the Examiner's Answer, the passage at page 7, lines 29 to 31, would mean that the second wire is not an alloy at all but is either zinc or a non-zinc metal. The Examiner's Answer concludes that this would form an alloy on a surface to which the thermal spray is directed. However, appellant points out that this is inconsistent with the description of the invention as found on page 1, beginning at line 10, which states that these materials, meaning zinc and zinc-based alloys, are thermal sprayed. There is no

room for an interpretation which would mean applying zinc and a non-zinc metal to the surface which would be the way the Examiner's Answer would seek to interpret the patent specification.

And finally, the allegation in the Examiner's Answer (page 15, lines 11-14) regarding the formation of an alloy by spraying two wires each of a single different material is clearly unsupported speculation, and is probably wrong as shown by *Hasui, et al.* US 5,763,015 of record, as explained below.

II. Appellant's Claims Are Not Rendered *Prima Facie* Obvious.

Appellant submits that Claims 1, 2, 4, 6, 7, 9-21, 23, 25 and 26 are patentable under 35 U.S.C. § 103(a) over the combination of the Zn-Al article in view of the *Hasui et al.* patent, U.S. 5,763,015.

The Examiner's Answer relies on the *Hasui* U.S. patent for an alleged teaching that it would be obvious to modify the primary reference to apply an alloy by the two-wire electric arc spraying method of *Hasui*. Attention is invited to the fact that *Hasui* does not teach the formation of an alloy coating but, instead, clearly teaches that the coating obtained does not form an alloy structure. See col. 1, lines 9, 10 and 11. *Hasui*'s coating results in zinc fine particles and aluminum fine particles randomly piled on one another so that they appear to form a zinc-aluminum alloy. However, no such alloy is formed as pointed out by *Hasui*. Accordingly, to utilize the system of *Hasui* in the procedures described in the Zn-Al article would not result in a coating of zinc and a zinc alloy as intended by appellant's invention. Consequently, appellant respectfully submits that the references fail to create *prima facie* obviousness for the claimed invention herein because there is no motivation to substitute a non-alloy of *Hasui* for an alloy of the Zn-Al article and further, because *Hasui* does not pertain to prevention of bio-fouling.

III. Hasui, et al. Fails to Motivate for Use of the Two-Wire System.

Appellant submits that Claims 17, 25 and 26 are patentable under 35 U.S.C. § 103 in view of the Zn-Al article, taken with the *Hasui et al.* U.S. patent.

Hasui, et al. has nothing whatsoever to do with preventing bio-fouling on a submerged marine surface. Instead, *Hasui, et al.* is concerned with sealing a pseudo-alloy coating to prevent penetration of a porous coating by sea-water, see col. 1, lines 24-29. *Hasui* teaches how to protect a non-alloy coating on a metal surface, see col. 1, lines 9-16. First, a zinc-aluminum pseudo alloy is formed by the two wire system using a zinc wire and an aluminum wire. This forms not a true alloy (contrary to the assumption in the Examiner's Answer referred to above) but instead forms a porous coating that has to be sealed. This would be contrary to appellant's intention which is to provide a zinc and zinc alloy coating on the surfaces that are submerged in a marine environment. Consequently, even if the references were combined, appellant respectfully submits that the result would not be the formation of a zinc and zinc alloy coating as defined in the claims herein. There is no motivation in the *Hasui* reference to form a true alloy using a two-wire system in place of the coatings described in the Zn-Al primary reference with any expectation of obtaining a beneficial or superior result.

IV. Appellant Submits That The Combination Relied On In The Examiner's Answer to Reject Claims 1, 2, 4, 6, 10, 13 to 18, 24 and 26 Under 35 U.S.C. § 103 Using *Goldheim*, In View of *Hatfield*, Does Not Render Appellant's Invention *Prima Facie* Obvious.

The *Hatfield* reference proposes a method of producing a metallic film on a thermoplastic or a thermosetting polymeric substrate to provide radio frequency shielding of electromagnetic interference. The polymeric substrate is first prepared by application of a primer which is an organic-based coating having a dispersion of silica gel to enhance the microscopic surface area and improve adhesion; see Abstract. Appellant respectfully submits that the *Hatfield* patent is

non-analogous prior art and would not suggest to a person skilled in the art faced with the problem of bio-fouling on a submerged marine surface that one should first apply an organic-based coating having a dispersion of silica gel onto the marine surface and then applying a metallic film on that surface.

Appellant, therefore, believes that no reason, suggestion or motivation exists in the *Hatfield* patent whereby a person skilled in the art would be led to use the *Hatfield* system in place of the process described by *Goldheim*. Accordingly, appellant respectfully submits that the references fail to establish *prima facie* obviousness.

For reasons set forth above and in appellant's main brief, appellant respectfully requests that the rejection be reversed.

Respectfully submitted,

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